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AMENDMENT TO THE CLAIMS

1. (Currently amended) A prosthesis comprising:
a reinforcement element and
a prosthetic conduit comprising biocompatible material, the
prosthetic conduit having a generally cylindrical
section having a generally straight surface in an axial
direction and an expanded section extending from an end
of the generally cylindrical section ~~and terminating at~~
to an edge shaped for attachment around a heart valve,
wherein the reinforcement element is circumferentially
positioned at the junction between the generally
cylindrical section and the expanded section.
2. (Original) The prosthesis of claim 1 wherein the biocompatible
material comprises tissue.
3. (Original) The prosthesis of claim 2 wherein the tissue
comprises pericardium, submucosa or dura mater.
4. (Original) The prosthesis of claim 2 wherein the tissue
comprises porcine, ovine, equine or bovine tissue.
5. (Original) The prosthesis of claim 2 wherein the tissue
comprises crosslinked tissue.
6. (Original) The prosthesis of claim 5 wherein the tissue is
crosslinked with glutaraldehyde or triglycidylamine.
7. (Original) The prosthesis of claim 1 wherein the biocompatible
material comprises at least two segments joined to form the
conduit.
8. (Original) The prosthesis of claim 7 wherein one segment forms

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the generally cylindrical section and a portion of the expanded section.

9. (Original) The prosthesis of claim 1 wherein the biocompatible material comprises a single segment.

10. (Original) The prosthesis of claim 1 wherein the expanded section has a maximum diameter at least about 10% larger than the average diameter of the generally cylindrical section.

11. (Original) The prosthesis of claim 1 wherein the expanded section has a maximum diameter from about 12% to about 20% larger than the average diameter of the generally cylindrical section.

12. (Original) The prosthesis of claim 1 wherein the expanded section has scallops along its free edge for attachment around a native aortic heart valve.

13. (Original) The prosthesis of claim 1 further comprising a prosthetic valve connected to the expanded section.

14. (Original) The prosthesis of claim 13 wherein the prosthetic valve comprises a rigid leaflet connected to an orifice ring.

15. (Original) The prosthesis of claim 13 wherein the prosthetic valve comprises tissue leaflets.

16. (Original) The prosthesis of claim 13 wherein the prosthetic valve comprises flexible polymer leaflets.

17. (Original) The prosthesis of claim 1 wherein the expanded section comprises tubules positioned for the attachment of the right and left coronary arteries.

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18. (Original) The prosthesis of claim 1 wherein the expanded section has two components that connect together to complete the formation of the expanded section.

19. (Original) The prosthesis of claim 1 wherein the reinforcement element is a ring.

20. (Original) The prosthesis of claim 1 wherein the reinforcement element comprises tissue.

21. (Original) The prosthesis of claim 1 wherein the reinforcement element comprises a polymer.

22. (Original) The prosthesis of claim 21 wherein the polymer is woven into a fabric.

23. (Original) The prosthesis of claim 1 wherein the reinforcement element comprises metal.

24. (Original) The prosthesis of claim 1 wherein the reinforcement element is a band of pericardium.

25. (Original) The prosthesis of claim 1 wherein the reinforcement element is a roll of tissue.

26. (Original) The prosthesis of claim 1 wherein the reinforcement element surrounds the circumference of the biocompatible material.

27. (Original) The prosthesis of claim 1 wherein the reinforcement element surrounds only a portion of the circumference of the biocompatible material.

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28. (Original) The prosthesis of claim 1 wherein the prosthetic conduit has a reinforcement near the inflow edge.

29. (Original) The prosthesis of claim 1 wherein the prosthetic conduit has a reinforcement near the outflow edge.

30. (Currently Amended) A prosthesis comprising:
a biocompatible material formed into a generally cylindrical section that has a generally straight surface in an axial direction and
an expanded section extending from the generally cylindrical section, the expanded section including tubules connecting the central lumen of the expanded section to an external opening.

31. (Original) The prosthesis of claim 30 wherein the tubules are positioned for the attachment of the right and left coronary arteries.

32. (Original) The prosthesis of claim 30 wherein the biocompatible material comprises at least two sections of material that join together to form the generally cylindrical section and the expanded section.

33. (Original) The prosthesis of claim 30 further comprising a prosthetic heart valve.

34. (Original) The prosthesis of claim 33 wherein the prosthetic heart valve is a stentless valve with flexible leaflets and a leaflet support structure that is positioned to avoid blockage of the tubules.

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35. (Original) The prosthesis of claim 30 wherein the biocompatible material comprises tissue.

36. (Currently amended) A prosthesis comprising:
biocompatible material formed into a generally cylindrical section having a generally straight surface in an axial direction and
an integral expanded section connected to the generally cylindrical section to form a conduit with a lumen extending through the generally cylindrical section and the expanded section,
the free edge of the expanded section having scallops that fit adjacent to and downstream from the commissures of a native heart valve.

37. (Original) The prosthesis of claim 36 wherein the biocompatible material comprises tissue.

38. (Original) The prosthesis of claim 36 further comprising a prosthetic valve attached to the biocompatible material.

39. (Currently amended) A prosthesis comprising:
a reinforcement element,
a prosthetic conduit comprising biocompatible material with a generally straight surface in an axial direction and
a prosthetic valve attached to the prosthetic conduit,
wherein the reinforcement element comprises a circular band that is circumferentially attached proximate one end of the prosthetic conduit downstream from the prosthetic valve to inhibit dilation of the conduit and to promote proper valve function.

40. (Currently amended) A prosthesis comprising

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a reinforcement element,
a prosthetic conduit comprising biocompatible material and
a prosthetic valve attached to the prosthetic conduit,
wherein the reinforcement element is circumferentially
attached proximate one end of the prosthetic conduit
downstream from the prosthetic valve to inhibit
dilation of the conduit and to promote proper valve
function,

wherein the prosthetic conduit comprises a generally
cylindrical section having a generally straight surface
in an axial direction and an expanded section extending
from the generally cylindrical section, wherein the
reinforcement element is positioned at the junction
between the generally cylindrical section and the
expanded section.

41. (Original) The prosthesis of claim 39 wherein the prosthesis
further comprises a reinforcement near the inflow edge.

42. (Currently amended) A prosthesis comprising
a first prosthetic conduit section of a conduit, the first
prosthetic conduit section having a generally straight
surface in an axial direction and
a second integral prosthetic conduit section of a conduit,
wherein ~~the~~ an inflow edge of the first prosthetic
conduit section is configured for attachment to ~~the~~ an
outflow edge of the second prosthetic conduit section,
the first prosthetic conduit section having a generally
cylindrical section and the second prosthetic conduit
section comprising a prosthetic valve, and ~~further~~
~~comprising~~
a reinforcement element including a circular band on the
conduit that limits dilation of the conduit.

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43. (Original) The prosthesis of claim 42 wherein the second conduit section has an expanded section having a maximum diameter at least about 10% greater than the average diameter of the generally cylindrical section.

44. (Original) The prosthesis of claim 42 wherein the prosthetic valve is a mechanical valve.

45. (Original) The prosthesis of claim 44 wherein the second conduit section has an expanded section with a generally spherical shape over a portion of a sphere.

46. (Original) The prosthesis of claim 42 wherein the prosthetic valve has flexible leaflets.

47. (Original) The prosthesis of claim 46 wherein the second conduit section has an expanded section with three lobes.

48. (Currently amended) A prosthesis comprising
a reinforcement element and
a prosthetic conduit comprising biocompatible material, the conduit having a generally straight surface in an axial direction and being shaped for attachment around a heart valve,
wherein the reinforcement element comprises a band circumferentially attached to the prosthetic conduit proximate to the outflow edge to limit dilation.

49. (Currently Amended) A prosthesis comprising:
a reinforcement element and
a prosthetic conduit comprising biocompatible material, the conduit having a generally straight surface in an axial

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direction and being shaped for attachment to a valve,
wherein the reinforcement element is circumferentially
attached to the prosthetic conduit proximate to the
outflow edge,
further comprising a prosthetic valve attached to the
prosthetic conduit.

50. (Currently amended) A prosthesis comprising:
a reinforcement element,
a prosthetic conduit comprising biocompatible material and
having a generally straight surface in an axial
direction and
a prosthetic valve circumferentially attached to the
prosthetic conduit, wherein the reinforcement element
is attached to the prosthetic conduit proximate to the
inflow edge.
51. (Currently amended) A prosthesis comprising
a reinforcement element and
a prosthetic conduit comprising biocompatible material, the
prosthetic conduit having only a single generally
cylindrical section that has a generally straight
surface in an axial direction and an expanded section
extending from an end of the generally cylindrical
section,
wherein the reinforcement element is a circumferentially
positioned band at the junction between the generally
cylindrical section and the expanded section to limit
dilation of the junction.